

SUBJECT INDEX

A

- A42867, 285
 Abidjan
 AIDS/HIV-1 infection in, 570
 Acaricides
 nikkomycins as, 279
 Acetate
Campylobacter pylori
 metabolism and, 251
Acholeplasma laidlawii
 plasmid DNAs isolated from,
 91-93
 restriction and modification
 systems in, 88
 Tn916-containing transfor-
 mants of, 95
 transfection of
 electroporation and, 86
 PEG-mediated, 84-85
Acholeplasma species
 genome size of, 83
 Acid phosphatase
Campylobacter pylori and,
 262
Leishmania virulence and,
 513
 Acid secretion inhibitor
Campylobacter pylori, 254
Acinetobacter calcoaceticus
 PQQ synthesis in, 40
recA gene of, 374
 Acquired immunodeficiency syn-
 drome (AIDS)
 epidemiology and modes of
 transmission of
 geographic differences in,
 562-71
 global epidemiology of, 555-
 74
 human herpesvirus type 6
 and, 60
 monitoring of, 559-61
 beginnings of, 557-58
 constraints on, 561-62
 origins of, 556-57
 prevention and control of,
 573
 projections for, 572-73
Acromonium lolii
 peramine from, 280
 Acridine orange stain
Campylobacter pylori and,
 255
Actinomyces fulvoviridis var.
acarbocidicus
 forphenicic from, 402-3
 Actinomycetes
 antibiotic production by, 398-
 99
 genetic manipulation of,
 239
recA gene of, 377
 secondary metabolism in,
 408-9
 sporulation in, 414
 Actinomycin D
 coronaviruses and, 308
Actinoplanes species
 BAY e 4609 from, 281
Actinoplanes utahensis
 cilofungin and, 283
 Actinorhodin, 414
 Actinoxanthin
 anticancer activity of, 400
 Aculeacin A
Candida albicans and, 283
 Adenosine-pyrimidine nucleoside
 transport
Leishmania plasma membrane
 and, 515
 Adherence factors
Campylobacter pylori, 253
 Adhesins, 467
 Adriamycin
 human leukemia ML-1 cells
 and, 276
Aeromonas caviae
recA gene of, 374
 A-factor, 405, 414
 Aflatoxins, 416
 biological activities of, 400
 Africa
 AIDS/HIV-1 infection in,
 567-70
 AIDS surveillance in, 560-61
 African trypanosomes
 gene rearrangements in, 452
 Agglutinogens
 pertussis prophylaxis and, 11
 Agriculture
 microbial products for, 278-
 80
Agrobacterium rhizogenes
 agrocin from, 399
Agrobacterium sp. strain ATCC
 21400
 β -glucosidases of, 230
Agrobacterium tumefaciens
recA gene of, 373
 Agrocin
 biological activity of, 399
 AIDS
 See Acquired im-
 munodeficiency syn-
 drome
 Alanine
Campylobacter pylori
 metabolism and, 251
 δ -L-Alanine
 spore germination and, 535
 Alcohols
 spore germination and, 536-
 37
 Alkaline phosphatase
Campylobacter pylori and,
 251, 262
 Alkaline protease
Pseudomonas aeruginosa and,
 336, 338
 Allomones, 405
 Allosamidin
 insect chitinase and, 279
 Alphaherpesviruses, 60
Amanita muscaria
 toxicity of, 401
Amanita species
 cyclic peptides from
 RNA polymerase inhibition
 and, 400
 α -Amanitin
 coronaviruses and, 308
 poxviruses and, 182-83
 Amicoumacin-A
 antiinflammatory activity of,
 402
 Aminopeptidase B
 bestatin and, 273
 secondary metabolites and,
 404
 Aminopeptidases
Campylobacter pylori and,
 251
 4-Aminoquinoline
Plasmodium falciparum and,
 434
 8-Aminoquinolone
Plasmodium falciparum and,
 434
 Amphomycin
 glycosylation in eukaryotic
 cells and, 399

- Anabaena* species
heterocyst formation in, 702-3
- Anabaena variabilis*
recA gene of, 377-78
- Anaeroplasma* species
genome size of, 83
- Ansamycins, 403
- Anthelmintic
nematode/cestode inhibition and, 401
- Anthracyclines
anticancer activity of, 400
biosynthesis of, 405
- Antibiotics
rRNA processing and, 122
secondary metabolites as, 398-99
See also specific type
- Antibodies
immunity to borreliae and, 158
- Antigen detection methods
Campylobacter pylori and, 261
- Antigens
ricketsial, 133-34
- Antipain, 272
- Antiserum
bacterial
requirements for, 10-11
- Bordetella pertussis*, 11
- Haemophilus influenzae*, 11
- meningococcus, 10
type b
production of, 7-8
- Antitumor agents
development of, 276-78
- Aphthoviruses
cleavage sequences in, 607
primary cleavage in, 611-13
- Archaeobacteria
rRNA operons of, 107
- Arsenate
spore germination and, 537
- Arthrobacter PI
RuMP pathway mutants in, 41
- Arthrobacter* species
genomic DNA probes for, 637
- Arylamidases
Campylobacter pylori and, 251, 262
- Aschochyta viciae*
ascofuranone from, 402
- Ascofuranone
immunological activity of, 402
- Ascomycetes
antibiotics produced by, 398-99
- Ascomycin
immunosuppressive activity of, 280
- Asia
AIDS/HIV-1 infection in, 570-71
- Aspartate transcarbamoylase (ATCase), 193-214
chimeric, 210-14
Escherichia coli
molecular structure of, 200-3
enzymatic/genetic organizations involving, 195-200
hybrid, 209-10
ornithine transcarbamoylase compared, 207-8
primary sequence of, 203-8
- Aspergillomarasmins*, 404
- Aspergillus alliaceus*
MY-336a from, 402
- Aspergillus flavus*
aflatoxins from, 400
- Aspergillus japonicus*
E-64 isolated from, 275
- Aspergillus* species
compactin/mevinolin synthesis in, 287
cyclic peptides from, 283
- Aspergillus terreus*
lovastatin from, 402
mutatein from, 275
- Asperlicin
cholecystokinin receptor and, 275-76
nontoxic pharmacological activity of, 402
- Asteroleplasma* species
genome size of, 83
- Australia
AIDS/HIV-1 infection in, 571
- Auvercin
toxicity of, 401
- Avermectins
agricultural uses of, 279
GABA receptors and, 285
nematode/cestode inhibition and, 401
- Avian myeloblastosis virus
inhibitors of, 281
- Avian spirochetosis
etiologic agent of, 156
- Avocado sunblotch viroid
complementary DNA probes for, 637
- Azide
spore germination and, 537
- Azinotricin
gram-positive activity of, 284
- Aztreonam, 285
- B
Bacilli
Koch-Weeks
classification of, 8-9
sporulation in, 414-15
- Bacillus brevis*
tyrocidine synthetase I from gene for, 415
- Bacillus cereus*
spores of
germination of, 535
- Bacillus licheniformis*
 β -lactamase production in induction of, 285
- Bacillus megaterium*
alanine-triggered germination in, 547
cellulase gene expression in, 224
- Bacillus megaterium* QMB1551
spore coat of, 534-35
spores of
germination of, 535
- Bacillus pumilis*
amicoumacin-A from, 402
- Bacillus* species
1-deoxynojirimycin from, 281
macrolides from, 282
- Bacillus stearothermophilus*
cellulase gene expression in, 224
- Bacillus subtilis*
alanine-triggered germination in, 547
aspartate transcarbamoylase of, 196-97
cellulase gene expression in, 224
developmental genes of, 532
5S RNA of, 118
germination mutants of, 538-40
heat-resistant spores of formation of, 702
pyrimidine-arginine biosynthesis in, 195
recA gene of, 376-77
rRNA operons of, 107-8
spore coat of
polypeptides in, 545-46
spores of
germination of, 535-38
surfactin from, 406
- Bacteria
cell division cycle in regulation of, 689-714
coliform
DNA probes for, 639
DNA rearrangements in, 452
gram-negative
bioactive metabolites of, 286
plasmids isolated from, 91-93
pyrogenicity of, 17
recA gene of, 368-76
gram-positive
recA gene of, 376-77

- growth at solid-liquid interfaces, 579-97
- mercury-resistant colony hybridization and, 633
- methanotrophic *Escherichia coli* expressing Mox genes from, 37
- methane oxidation in, 42
- plasmids in, 36
- production of chemicals by, 44-48
- methylophilic, 27-52
- assimilation genes in, 41-42
- auxotrophy markers in, 38
- bioremediation and, 51-52
- classification of, 28-29
- commercial utility of, 43-50
- dichloromethane dehalogenase gene of, 42-43
- expression of foreign genes in, 37-38
- gene cloning vectors and, 31
- genetic advances in, 52
- genetic analysis and manipulation of, 29-34
- gene transfer systems in, 30-31
- methanol oxidation genes in, 38-41
- molecular biology of, 34-36
- mutagenesis in, 33-34
- nitrogen fixation genes in, 43
- plasmids in, 36
- rRNA processing in, 105-24
- autoregulation of ribosome content and, 122-24
- coregulation with protein synthesis, 121-22
- pathways of, 110-16
- precursors for, 117-20
- rumen
- genetic manipulation of, 23-39
- See also specific type
- Bacterial antiserum requirements for, 10-11
- Bacterial luciferase, 405
- Bacterial spores, 531-48
- formation and structure of, 532-35
- germination of, 535-38
- βLe-alanine pathway of, 540-42
- alternative pathway of, 542-43
- germination genes and, 538-46
- models of, 546-48
- mutants of
- reverse genetics and, 545-46
- structure of
- genes involved in, 544-45
- Bacterial vaccines requirements for, 11-17
- Bacteriophage T4
- recA gene of, 378
- Bacteroidaceae
- recA gene of, 375
- Bacteroides fragilis*
- recA gene of, 375
- Bacteroides nodosus*
- pilins of, 453-54
- Bacteroides* species
- DNA probes detecting, 636
- genomic DNA probes for, 637
- Bafilomycins
- nematode/cestode inhibition and, 401
- Barley yellow dwarf virus
- complementary DNA probes for, 637
- Basidiomycetes
- antibiotics produced by, 398-99
- BAY e 4609
- enzyme inhibition by, 281
- B-cell differentiation
- DNA rearrangements in, 452
- Beauveria bassiana*
- muscardine disease in silkworms and, 400-1
- Belgium
- AIDS/HIV-1 infection in, 567
- Benanomicins
- HIV and, 280
- Benzodiazepines
- avermectin binding to GABA receptors and, 285
- Besatin
- activities of, 272-73
- anticancer, 400
- immunological, 403
- Betaherpesviruses, 60
- B-factor, 405
- Bialaphos
- agricultural use of, 279
- herbicidal activity of, 403
- Bioactive microbial products
- See Biopharmaceutins
- Biological products
- regulation of, 9-17
- sterility testing of, 17-18
- Biopharmaceutins, 271-90
- agricultural products, 278-80
- cellular proliferation inhibitors, 276-78
- cyclic peptides, 283-84
- enzyme inhibitors, 274-75
- future trends in, 289-90
- history of, 272-73
- immunomodulators, 273-74
- macrolides, 282-83
- receptor antagonists, 275-76
- screening assays for, 284-85
- Bioremediation
- methylophilic and, 51-52
- Biosynthetic enzymes
- uniqueness of, 406-7
- Blasticidin S, 280
- Bleomycins
- anticancer activity of, 400
- Blood coagulation factors
- vaccinia gene product and, 179
- Blood products
- AIDS/HIV-1 infection and, 563
- Bordetella pertussis*
- exotoxin of, 14
- vir gene of
- reading-frame shift in, 459
- See also Pertussis
- Bordetella pertussis* antiserum, 11
- Bordetella* species
- taxonomy of, 8-9
- Borrelia burgdorferi*
- linear plasmids of, 163-64
- terminal sequences of, 166
- Lyme disease due to, 156
- Borrelia duttonii*
- linear plasmids of, 163-64
- tick-borne relapsing fever due to, 156
- Borrelia hermslii*
- tick-borne relapsing fever due to, 156
- Borrelia hermslii*
- antigenic shifts in, 159-60
- plasmid copy number and, 169
- generation time of, 157-58
- gene rearrangements in, 452
- linear plasmids of, 163-64
- recombination events in, 167
- serotypes of, 160
- variable antigens of, 161
- Borrelia parkeri*
- tick-borne relapsing fever due to, 156
- variable antigens of, 161
- Borrelia recurrentis*
- epidemic relapsing fever due to, 156
- Borrelia* species, 155-70
- antigenic variation in, 161-62
- DNA rearrangements and, 162-63
- linear plasmids of, 163-64
- recombination between, 164-68
- Borrelia turicatae*
- tick-borne relapsing fever due to, 156

- variable antigens of, 161
 - Bovine coronavirus (BCV), 304
 - Bovine viral diarrhea virus (BVDV)
 - flaviviruses and, 679
 - Brazil
 - AIDS/HIV-1 infection in, 565-66
 - Breast feeding
 - HIV-1 transmission and, 568-69
 - Brefeldin A
 - intracellular processing of antigens and, 274
 - Brevibacterium lactofermentum*
 - cellulase gene expression in, 224
 - Brome mosaic virus
 - RNA recombination in low-frequency, 326
 - Butyrivibrio fibrisolvens*
 - genetic manipulation of, 238-39
 - Butyrivibrio fibrisolvens* EG
 - xylanase:CMCase activity in, 226
 - Butyrolactones, 405
 - C
 - Caldocellum saccharolyticum*
 - β -glucosidases of, 230
 - Calphostins
 - cancer treatment and, 277
 - Calvin-Benson cycle
 - methylotroph classification and, 28
 - Campylobacter jejuni*
 - cell wall of, 250
 - nonculturable stage of, 9
 - Campylobacter pylori*, 249-63
 - bacteriology of, 250-55
 - diagnosis of, 255-61
 - antigen detection methods and, 261
 - gastric biopsy and, 255-59
 - nucleic acid hybridization and, 261
 - serology and, 259-60
 - urea breath test and, 260-61
 - identification of, 261-63
 - cellular fatty acid analysis and, 262
 - enzyme profiling and, 262
 - protein electrophoresis and, 263
 - restriction endonuclease
 - DNA analysis and, 263
 - metabolism and physiology of, 250-53
 - morphological characteristics of, 250
 - potential virulence factors for, 253-55
 - Canada
 - AIDS/HIV-1 infection in, 564
 - Cancer
 - calphostins and, 277
 - human herpesvirus type 6 and, 60
 - Pseudomonas aeruginosa* and, 336
 - Candida albicans*
 - compounds effective against, 283
 - Candida parapsilosis*
 - L-671,329 and, 283
 - Carbamoyl phosphate
 - pyrimidine-arginine biosynthesis and, 194-95
 - Carbapenems, 285, 290
 - Carbohydrates
 - Campylobacter pylori* and, 251
 - Carbol-fuchsin stain
 - Campylobacter pylori* and, 255
 - Carbon dioxide
 - Rickettsia prowazekii* multiplication and, 143-44
 - Cardioviruses
 - cleavage sequences in, 607
 - primary cleavage in, 611-13
 - Caribbean
 - AIDS/HIV-1 infection in, 564-65
 - Casein kinases
 - varicella-zoster virus glycoproteins and, 72-74
 - Castanospermine
 - varicella-zoster glycoprotein gpII and, 65-69
 - Catalase
 - Campylobacter pylori* and, 251
 - Cathepsin B
 - inhibition of, 275
 - Cathepsins
 - secondary metabolites and, 404
 - Caulobacter crescentus*, 689-714
 - cdc* genes of
 - developmental regulation and, 710-13
 - functional organization of, 696-97
 - cdc* mutations in, 710-11
 - cell division in
 - asymmetric, 691
 - chemotactic proteins of, 709-10
 - chromosome replication in, 692-93
 - chromosome segregation in, 693-94
 - developmental events of
 - sequence of, 694
 - flagellar proteins of, 708-9
 - flagellum biosynthesis in, 698-702
 - genetic approaches to, 694-95
 - genetic mapping of, 697-98
 - heat-shock proteins of, 710
 - life cycle of, 691-94
 - mutational analysis of, 695-96
 - pilus assembly in, 698
 - pseudoreversion analysis and, 711-13
 - spatial localization in, 708-10
 - transcription in
 - promoter specificity and, 703-8
 - regulatory proteins and, 707-8
- Cell differentiation
 - in bacteria, 689-714
- Cell-mediated immunity
 - bestatin and, 273
- Cellobiohydrolases
 - cellulose degradation and, 220
- Cellular fatty acid analysis
 - Campylobacter pylori* and, 262
- Cellular proliferation
 - inhibitors of
 - development of, 276-78
- Cellulase genes
 - expression in foreign hosts, 224-25
 - expression in native hosts, 222-24
 - multiplicity and organization of, 221-22
- Cellulases
 - molecular biology of, 219-40
 - structure and function of, 225-37
- Cellulolytic organisms
 - genetic manipulation of, 237-40
- Cellulose
 - degradation of
 - molecular biology of, 219-40
- Cellvibrio mixtus*
 - β -glucosidase gene of, 222
- Cephalosporins
 - leukocyte elastase and, 287
- Cephalosporium acremonium*
 - cephalosporin from, 407
- Cephalosporium caeruleum*
 - cerulenin from, 287
- Cepharmycin, 408
- Cerulenin
 - fatty acid synthase and, 287-88
- Cestodes
 - antibiotics inhibiting, 401
- C-factor, 405

- Charcoal
Campylobacter pylori growth and, 250
- Chemotactic proteins
 of *Caulobacter crescentus*, 709-10
- Chickenpox
 varicella-zoster virus and, 60-61
- China
 AIDS/HIV-1 infection in, 571
- Chitin synthesis
 inhibition of
 microbial products for, 278
- Chlamydia* species
 rRNA operons of, 109
- Chloramphenicol
 rRNA processing and, 122
- Chloramphenicol acetyl transferase (CAT)
 pilin variation and, 462
 in vaccinia virions, 187
- 4-Chlorobiphenyl-degrading organisms
 isolation of
 colony hybridization and, 633
- Chloroflexus aurantiacus* cyano-bacterial mat
 sulfide uptake by, 590
- Chloroplast glutamine synthetase
 phosphinothricin and, 279
- Cholecystokinin (CCK) antagonist
 development of, 275-76
- Cholera vaccine, 15-16
- Cholesterol synthesis
 inhibitors of, 274, 402
- Chymostatin, 272
- Chymotrypsin
 secondary metabolites and, 404
- Chytrids
 terpenoid sex factors of, 413
- Cilofungin
 antifungal activity of, 283
- Circumsporozoite protein, 489
- Citrate
Campylobacter pylori
 metabolism and, 251
- Citrinin
 cholesterol synthesis and, 402
- Citrus exocortis viroid
 complementary DNA probes for, 637
- Cladosporium cladosporioides*
 calphostins from, 277
- Claviceps fusiformis*
 ergot alkaloids from, 407
- Clostridium acetobutylicum*
 genetic manipulation of, 239
- Clostridium perfringens*
 genetic manipulation of, 239
- Clostridium thermocellum*
 cellulase complex of, 221
 cellulase/hemicellulase-encoding genes of, 221
 lichenase gene of, 222
- Clostridium thermocellum* EGC
 xylanase:CMCase activity in, 226
- Clostridium thermocellum* EGD
 active site of, 236-37
- Clostridium thermocellum* EGE
 xylanase:CMCase activity in, 226
- Clostridium thermohydrosulfuricum*
 genetic manipulation of, 239
- Cocaine injection
 AIDS/HIV-1 infection and, 563
- Coliform bacteria
 DNA probes for, 639
- Colony hybridization, 630-34
- Compactin
 cholesterol synthesis and, 274, 280, 402
 HMG-CoA reductase and, 278
 microbial synthesis of, 287
- Complement
 type b antiserum and, 7
- Complement cascade
 inhibition of, 275
- Complement fixation
Campylobacter pylori and, 259
- Complement receptors
Leishmania and, 502
- Complestatin
 complement cascade and, 275
- Computer-enhanced light microscopy
 sessile microorganisms and, 581-84
- Congenital varicella syndrome, 61
- Congressional Biologics Control Act (1902), 9
- Conjugation
 gene transfer in methylotrophs and, 30
- Conjunctiva
Haemophilus aegyptius infection of, 9
- Conjunctivitis
 epidemic acute, 8, 20
- Cordycepin
 vaccinia virus and, 177-78
- Coronaviruses, 303-27
 gene assignments in, 306-7
 genome structure of, 306-7
- genomic RNA replication in, 320-22
- mRNAs of
 transcription of, 309-18
- replication of
 pathway of, 307-9
- RNA recombination in
 high-frequency, 324-26
- RNA synthesis in
 enzymology of, 322-24
- negative-stranded, 318-19
- virions of
 structure of, 304-6
- Coxiella* species
 growth of, 132
- Cryptococcal meningitis, 560-61
- Cuba
 AIDS/HIV-1 infection in, 565
- Culture
Campylobacter pylori and, 255-56
Plasmodium falciparum and, 493-94
- Cyanide
 spore germination and, 537
- Cyanobacteria
recA gene of, 377-78
- Cyclic AMP phosphodiesterase
 inhibition of, 404
- Cyclic peptides
 biological activities of, 283-84
 RNA polymerase inhibition and, 400
- Cycloheximide
 vaccinia virus and, 178
- Cyclophenin, 405
 structural relationship to diazepam, 286-87
- Cyclophilin
 cyclosporin A and, 273
- Cyclosporin A
 immunomodulation and, 273
 protein kinase C activity and, 277
- Cyclosporins
 immunological activity of, 402
- Cysteine proteinases
Leishmania virulence and, 515-16
- Cystic fibrosis
Pseudomonas aeruginosa and, 336
- Cytochalasin B
 internalization of *Rickettsia prowazekii* and, 136
- Cytochalasins
 biological activities of, 400
- Cytotoxin
Campylobacter pylori, 254

- D
- Dengue hemorrhagic fever (DHF), 651
- Dengue shock syndrome (DSS), 651
- Dental caries
mutastein for, 275
- Deoxymannojirimycin
varicella-zoster glycoprotein gpII and, 66-69
- 1-Deoxynojirimycin
enzyme inhibition by, 281-82
- Deoxyribonuclease
Campylobacter pylori and, 251
- Destomycin
nematode/cestode inhibition and, 401
- Destruixins, 284, 286
insecticidal activity of, 401
- Desulfurococcus mobilis*
rRNA operons of, 107
- Diabetes mellitus
Pseudomonas aeruginosa and, 336
- Diazepam
cyclophenin structurally related to, 286-87
- Dibromomethane
methane oxidation mutants in methylothrophs and, 33
- Dichloromethane
methane oxidation mutants in methylothrophs and, 33
- Dictyostelium* species
amoeboid aggregation in cyclic AMP and, 413
- Dihydrogranatirhodin, 289
- Dihydromederrhodin A, 289
- Dihydroorotase
pyrimidine biosynthesis and, 195
- Dilophus ligatus*
bioactive metabolites of antimicrobial activity of, 289
- Direct urease test
Campylobacter pylori and, 257-58
- Disease
germ theory of, 1
- DNA-damage repair
RecA protein and, 366-67
- DNA hybridization
most-probable-number, 640-41
See also Nucleic acid hybridization
- DNA probe filter hybridization, 628
- DNA probes
double-stranded, 636-37
nonradioactive, 629-30
- radioactive, 629
single-stranded, 637
- DNA sequencing
recA gene and, 379-80
- DNA synthesis
poxviruses and, 175-79
- Doratomyces* species
compactin/mevinolin synthesis in, 287
- Doxorubicin
HIV and, 281
- E
- E-64, 275
- Echinocandin B
Candida albicans and, 283
- Ectoenzymes
Leishmania virulence and, 509-15
- Ehrlichia* species
growth of, 132
- EIS
See Electrochemical impedance spectroscopy
- Elaiophylin
antihelminthic activity of, 281
- Elastase
Pseudomonas aeruginosa and, 336, 338
secondary metabolites and, 404
- Elastatinal, 272
- Electrochemical impedance spectroscopy (EIS)
microbial influenced corrosion and, 595-96
- Electron microscopy
sessile microorganisms and, 593
- Electroporation
gene transfer in methylothrophs and, 31
mycoplasmas and, 86
- ELISA
See Enzyme-linked immunosorbent assay
- Elsamycin
antitumor activity of, 282
- Encephalitis
Japanese, 651
- Endo-alpha-N-acetylgalactosaminidase (O-glycanase)
varicella-zoster glycoprotein gpII and, 66-68
- Endo-beta-N-acetylglucosaminidase F (Endo F)
varicella-zoster glycoprotein gpII and, 66
- Endo-beta-N-acetylglucosaminidase H (Endo H)
varicella-zoster glycoprotein gpII and, 64
varicella-zoster glycoprotein gpII and, 67
- Endoglucanases
cellulose degradation and, 220
- Endothia parasitica*
endothiapepsin from, 287
- Endothiapepsin
renin inhibition and, 287
- Enkastins, 275
- Enterobacteriaceae
recA gene of, 368-71
- Enterococcus faecalis*
conjugal transposon Tn916 of transfer of, 87
- Enteroviruses
cleavage sequences in, 607
primary cleavage in, 610-11
- Environmental analysis
nucleic acid hybridization and, 638-40
- Enzyme inhibitors
development of, 274-75
- Enzyme-linked immunosorbent assay (ELISA)
Campylobacter pylori and, 259
HIV-1 antibodies and, 556-57
- Enzyme profiling
Campylobacter pylori and, 262
- Enzymes
biosynthetic
uniqueness of, 406-7
methylothrophic production of, 49
- Eosin stain
Campylobacter pylori and, 255
- Epidermal growth factor (EGF)
pendolmycin and, 277
vaccinia gene product and, 179
- Epidermal growth factor (EGF) kinase
lovendustin and, 278
- Epithenamycin E, 285
- Erbstatin
tyrosine kinase and, 278
- Ergot alkaloids, 396, 407, 417
pharmacological effects of, 401
- Ergotine, 396
- Erwinia carotovora*
recA gene of, 370-71
- Erwinia chrysanthemi*
genetic manipulation of, 238
recA gene of, 370-71
- Erwinia herbicola*
aspartate transcarbamoylase of, 204

- Erythema potency assay, 16
Escherichia coli
 aspartate transcarbamoylase of
 molecular structure of, 200-3
 auxotrophic mutants of
 complementation of, 38
 complementation with DNA from methanol utiliz-
 ers, 36
 cellulase gene expression in,
 224
 DNA probes for, 636, 639
 flagellum formation in, 700
 pyrimidine-arginine biosynthe-
 sis in, 194-95
recA gene of, 368-79
 DNA sequencing of, 379-80
RecA protein of, 366-68
 protein sequencing of, 380-83
 rRNA operons of, 106-9
 rRNA processing in
 pathways of, 110-16
 virulence factors in
 oligonucleotide probes for,
 638
- Esterases
 short-chain fatty acid
Campylobacter pylori and,
 251, 262
- Eubacteria
 rRNA operons of, 107
- Eukaryotes
 DNA rearrangements in, 452
- Eukaryotic cells
recA analogues in, 378-79
- Eupenicillium* species
 compactin/mevinolin synthesis
 in, 287
- Europe
 AIDS/HIV-1 infection in,
 566-67
- Exoenzyme S, 336-37
- Exotoxin A
 See *Pseudomonas aeruginosa*
 exotoxin A
- F
- Fasalar acid, 403
- Fatty acid synthase
 cerulenin and, 287-88
- Feline infectious peritonitis virus
 (FIPV), 304
- Fibrobacter succinogenes* EG3
 xylanase:CMCase activity in,
 226
- Fibronectin receptor (FnR)
Leishmania and, 502
- Fischerella* species
 hapalindolone from, 289
- FK-156
 immunological activity of,
 403
- FK-506, 273-74, 280
 immunological activity of,
 282, 403
- Flagellar proteins
 of *Caulobacter crescentus*,
 708-9
- Flaviviruses, 649-80
 classification of, 650-51
 conserved RNA sequences
 and structures of, 673-75
 as disease agents, 651-52
 genetic divergence among,
 677-79
 genomic RNA of
 organization and translation
 of, 653-55
 life cycle in nature, 650-51
 nonstructural proteins of, 667-71
 replication in cultured cells,
 652-53
 RNA replication in, 675-77
 structural proteins of, 660-67
 viral polyprotein of
 proteolytic processing of,
 655-60
 virions of
 structure and assembly of,
 667-71
- Flow cytometry
 varicella-zoster virus gly-
 coproteins and, 76-77
- Fluoroimmunoassay
Campylobacter pylori and,
 259
- 5-Fluorouracil
 bone marrow damage due to
 reversal of, 273
- FMDV
 See Foot-and-mouth disease
 virus
- Folate transport
Leishmania plasma membrane
 and, 514
- Foot-and-mouth disease virus
 (FMDV), 604
 leader-catalyzed cleavage in,
 616
- Formate
Campylobacter pylori
 metabolism and, 251
- Forphenicine
 anticancer activity of, 400
 immunological activity of,
 402-3
- Forphenicinal
 immunological activity of,
 403
- FR-900156, 273
 FR-900483
 immunological activity of,
 403
- FR-900490, 273
 FR-900494
 immunological activity of,
 403
- FR-900520, 280
 FR-900523, 280
 FR-901235, 273
- Fumarate
Campylobacter pylori
 metabolism and, 251
- Fusaric acid, 417
- Fusarium oxysporum*
 fusaric acid from, 403
- Fusarium* species
 zearenone from, 402
- G
- Galbonolides
 antifungal activity of, 282
- Gammaherpesviruses, 60
- Gas-liquid chromatography
Campylobacter pylori and,
 262
- Gastric biopsy
Campylobacter pylori and,
 255-59
- Gastric disease
Campylobacter pylori and,
 249-50
- Gastric mucin protease
Campylobacter pylori, 254
- Gastric ulcer
 pathogenesis of
Campylobacter pylori
 urease and, 252
- Gastric urea
Campylobacter pylori and,
 258-59
- Gastritis
Campylobacter pylori and,
 250
- Gastrointestinal ulcerative dis-
 ease
Campylobacter pylori and,
 250
- Geldanamycin
 antitumor activity of, 278
c-myc oncogene and, 282
- GEMs
 See Genetically engineered
 microorganisms
- Gene cloning vectors
 methylotrophs and, 31
- Gene probes
 development of, 635-38
 organisms detected by, 631-32

- Genetically engineered microorganisms (GEMs), 626
- Genetic mapping
Caulobacter crescentus and, 697-98
- Gene transfer systems
 methylotrophs and, 30-31
- Genistein, 284
- Gibberella fujikuroi*
 gibberellic acid from, 403
- Gibberellic acid, 403
- Gibberellins, 416
- Giemsa stain
Campylobacter pylori and, 255
- Gimenez stain
Campylobacter pylori and, 255
- Glibobactins
 antifungal activity of, 283-84
- Gloeocapsa alpicola*
recA gene of, 377
- Glucose transport
Leishmania plasma membrane and, 514
- Glucosidases
 inhibition of, 404
- α -Glucosidases
 microbial inhibitors of, 281-82
- β -Glucosidases
 cellulose degradation and, 220
- Glutamate
 PQQ biosynthesis and, 40
- r-Glutamyl aminopeptidase
Campylobacter pylori and, 262
- Glycine
Campylobacter pylori
 metabolism and, 251
- Glycoproteins
 varicella-zoster virus, 59-78
 biosynthesis of, 62-71
 intracellular trafficking of, 75-77
 phosphorylation of, 71-75
- Gram-negative bacteria
 bioactive metabolites of, 286
 plasmids isolated from, 91-93
 pyrogenicity of, 17
recA gene of, 368-76
- Gram-positive bacteria
recA gene of, 376-77
- Gram stain
Campylobacter pylori and, 255
- Granulocyte elastase
 human lung tissue damage due to, 286
- Guinea pig skin potency assay, 16
- Gymnoascus* species
 compactin/mevinolin synthesis in, 287
- H**
- Haemophilus aegyptius*, 8-9
- Haemophilus influenzae*
 capsule of, 6-7
 influenza and, 5-7
 isolation of
 precipitin test for, 10
 LPS variation in, 459
 non-type-specific
 pathogenicity of, 6-7
recA gene of, 375-76
 type b antiserum of
 production of, 7-8
- Haemophilus influenzae* anti-serum, 11
- Haemophilus* species
 DNA uptake sequence of, 466
 taxonomy of, 8-9
- Haiti
 AIDS/HIV-1 infection in, 565
- Haloalkanes
 microbial degradation of, 51
- Haloalkenes
 microbial degradation of, 51
- Halobacterium cutirubrum*
 rRNA operons of, 107, 109
- Hansenula polymorpha*
 as host for heterologous protein production, 49
- Hapalindolinone
 vasopressin and, 289
- Heart disease
Pseudomonas aeruginosa and, 336
- Heat-shock proteins
 of *Caulobacter crescentus*, 710
Leishmania virulence and, 516-17
- Heat-shock response
Leishmania and, 505-6
- Helicobacter pylori*
 See *Campylobacter pylori*
- Helminthosporium victoriae*
 victorin from, 403
- Hemagglutination
Campylobacter pylori and, 259
- Hematoxylin stain
Campylobacter pylori and, 255
- Hemin
Campylobacter pylori growth and, 250
- Hemolysin
Campylobacter pylori, 254-55
- Hemophilia
 AIDS/HIV-1 infection and, 563
- Hepatitis-A viruses
 cleavage sequences in, 607
 DNA probes for, 639
- Herbicides
 phytotoxicity of, 403
- Herbimycin A
c-myc oncogene and, 282
- Herbimycins
 antibiotic activity of, 403
- Heroin injection
 AIDS/HIV-1 infection and, 563
- Herpesviruses
 classification of, 60-61
- Heterosexual contact
 AIDS/HIV-1 infection and, 563-64
- Hexadecanoic acid
Campylobacter pylori and, 262
- Histologic staining
Campylobacter pylori and, 255
- HIV
 See Human immunodeficiency virus
- HIV-1
 See Human immunodeficiency virus-1
- HIV-2
 See Human immunodeficiency virus-2
- Hog cholera virus (HCV)
 flaviviruses and, 679
- Homoalansine
 insecticidal/herbicide activity of, 403
- Homologous recombination
RecA protein and, 366
- Homosexual contact
 AIDS/HIV-1 infection and, 562-63
- Human coronavirus (HCV), 304
- Human immunodeficiency virus (HIV)
 benanomycin and, 280

- Human immunodeficiency virus
(HIV) reverse transcriptase
doxorubicin and, 281
screen for, 285
streptonigrin and, 281
Human immunodeficiency virus-
1 (HIV-1)
origins of, 556-57
Human immunodeficiency virus-
1 (HIV-1) infection
epidemiology and modes of
transmission of
geographic differences in,
562-71
global epidemiology of, 555-
74
monitoring of, 558-59
constraints on, 561-62
prevention and control of,
573
projections for, 572-73
Human immunodeficiency virus-
2 (HIV-2), 571-72
3-Hydroxy-3-methyl glutaryl
CoA (HMG-CoA) reductase
inhibitors of, 274
3-Hydroxy-3-methyl glutaryl
CoA (HMG-CoA) synthase
mevalonate pathway and, 274
3-Hydroxy-octadecanoic acid
Campylobacter pylori and,
262
Hygromycin
nematode/cestode inhibition
and, 401
Hyphomicrobium X
expression of foreign genes
in, 37
Hypochlorhydria
Campylobacter pylori and,
254
Hypoglycemia
pertussis encephalopathy and,
20
Hypomyces species
compactin/mevinolin synthesis
in, 287
- I
- Ibotoxic acid
toxicity of, 401
IC201
immunological activity of,
402
Immune function
bestatin and, 273
Immune response
Pseudomonas aeruginosa and,
336
Immune sera
borellial infections and, 158
- Immunity
cell-mediated
bestatin and, 273
Immunoblot
Campylobacter pylori and,
259
Immunodeficiency
Pseudomonas aeruginosa and,
336
Immunofluorescence
Campylobacter pylori and,
255
Immunomodulators
development of, 273-74
Immunoperoxidase test
Campylobacter pylori and,
255
Imperfect fungi
antibiotics produced by, 398
India
AIDS/HIV-1 infection in, 571
Infectious bronchitis virus
(IBV), 304
Influenza
Haemophilus influenzae and,
5-7
1918-19 epidemic, 4-5
Insects
secondary metabolites and,
400-1
Interleukins
bestatin and, 273
Intestinal maltase
microbial inhibitors of, 281
Intestinal sucrase
microbial inhibitors of, 281
Intracellular parasitism
Leishmania virulence and,
501-6
Intravenous drug abuse
AIDS/HIV-1 infection and,
563
Iron
exotoxin A transcription and,
341-44
Italy
AIDS/HIV-1 infection in, 567
Ivermectin
agricultural use of, 279
- J
- Japanese encephalitis, 651
Jietacins
antifungal activity of, 401
- K
- K-76
complement cascade and, 275
Kaposi's sarcoma, 556, 558,
560-61
- Kenya
AIDS/HIV-1 infection in,
569-70
 α -Ketoglutarate
Campylobacter pylori
metabolism and,
251
Kitasatospora kifunense
FR-900494 from, 403
Kitasatospora papulosa
carbapenem from, 285
Klebsiella oxytoca
growth rate on granular acti-
vated carbon, 592
Klebsiella pneumoniae
human lung infection by
granulocyte elastase and,
286
Koch-Weeks bacillus
classification of, 8-9
Kojic acid, 416
Kyananur Forest disease,
651
- L
- L-156373, 276
L-364718, 276
L-671329, 283
Lactate
Campylobacter pylori
metabolism and, 251
Lactvicin
structure of, 276
Lactobacillus plantarum
cellulase gene expression in,
224-25
Lactobacillus species
genomic DNA probes for,
637
Legionella pneumophila
recA gene of, 376
Leishmania major
metacyclogenesis in, 505
proteolytic activity of gp63
in, 510-13
Leishmaniasis, 500
Leishmania species
differentiation of, 504-6
intracellular survival of, 506
parasite, vector, animal mod-
els for, 500-1
receptor-mediated endocytosis
of, 502-4
Leishmania virulence, 499-522
cysteine proteinases and
megosomes and, 515-16
heat-shock proteins and, 516-
17
intracellular parasitism and,
501-6
regulation of, 517-19

- surface glycoproteins-ectoenzymes and, 509-15
 surface lipophosphoglycan and, 507-9
 Leucine aminopeptidase bestatin and, 273
Campylobacter pylori and, 262
 secondary metabolites and, 404
 Leukemia
 P338
 glidobactins and, 284
Pseudomonas aeruginosa and, 336
 Leukocyte elastase cephalosporins and, 287
 Leupeptins, 272
 Light microscopy sessile microorganisms and, 580-84
 Lincomycin aerial mycelium formation and, 288
 Lipids sessile microorganisms and, 584-85
 Lipophosphoglycan *Leishmania* virulence and, 507-9
 Lipopolysaccharide (LPS) bacterial biomass on surfaces and, 586-87
 typhus group rickettsiae and, 134-35
Listeria species gene probes for, 637
 virulence factors in oligonucleotide probes for, 638
 LL-F28249 parasiticide activity of, 282
Lotus rhizobia DNA probes detecting, 636
 Lovastatin cholesterol synthesis and, 274, 402
 Lovendustin epidermal growth factor kinase and, 278
 Loxistatin muscular dystrophy and, 275
 LPS See Lipopolysaccharide
 Luciferase bacterial, 405
 Lyme disease etiological agent of, 156
 Lysine *Campylobacter pylori* metabolism and, 251
 surface glycoproteins-ectoenzymes and, 509-15
 surface lipophosphoglycan and, 507-9
 Leucine aminopeptidase bestatin and, 273
Campylobacter pylori and, 262
 secondary metabolites and, 404
 Leukemia
 P338
 glidobactins and, 284
Pseudomonas aeruginosa and, 336
 Leukocyte elastase cephalosporins and, 287
 Leupeptins, 272
 Light microscopy sessile microorganisms and, 580-84
 Lincomycin aerial mycelium formation and, 288
 Lipids sessile microorganisms and, 584-85
 Lipophosphoglycan *Leishmania* virulence and, 507-9
 Lipopolysaccharide (LPS) bacterial biomass on surfaces and, 586-87
 typhus group rickettsiae and, 134-35
Listeria species gene probes for, 637
 virulence factors in oligonucleotide probes for, 638
 LL-F28249 parasiticide activity of, 282
Lotus rhizobia DNA probes detecting, 636
 Lovastatin cholesterol synthesis and, 274, 402
 Lovendustin epidermal growth factor kinase and, 278
 Loxistatin muscular dystrophy and, 275
 LPS See Lipopolysaccharide
 Luciferase bacterial, 405
 Lyme disease etiological agent of, 156
 Lysine *Campylobacter pylori* metabolism and, 251
- M**
 Macrolides biological activities of, 282-83
 insecticidal activity of, 401
 Macromomycin anticancer activity of, 400
 Macrophages *Leishmania* binding to, 502-4
 leishmanial infection of, 520
 Macroretolides insecticidal activity of, 401
 Malaria, 2
 Malaria parasites chromosomal deletions in, 485-86
 chromosomal polymorphism in, 483-86
 chromosome of, 481-83
 environmental pressure and, 493-95
 gametocytes of cytoskeleton and microtubular organization of, 441
 nucleus, chromosomes, DNA content of, 442-43
 origin of, 431
 ribosomes of, 441-42
 gene duplication in, 486-87
 genetic diversity in, 479-95
 genetic recombination in, 483-85
 life cycle of, 430, 481
 point mutations and selection in, 491-93
 reduction division of, 483
 sex determination in, 437
 sexual differentiation in, 429-45
 sexual stages of as specialized cells, 440-45
 transformation in mosquito vector, 438-40
 sexual stage-specific protein expression in, 443-45
 surface antigen genes of repetitive sequences in, 487-91
 Malate *Campylobacter pylori* metabolism and, 251
 Mannose-fucose receptors (MFR) *Leishmania* and, 502
 Mannose-N-acetylglucosamine receptor *Leishmania* and, 502
Matarhizium ainsliei destruxins from, 284
 Mederhodins, 289
 Megasomes *Leishmania* virulence and, 515-16
 Meningitis cryptococcal, 560-61
 Meningococci interspecies exchange and, 465
 nonpilated phases of, 468-69
 opacity protein of antigenic variation in, 470
 Opa proteins of, 455
 pilin antigenic variation in, 469-70
 tissue and cell tropisms of, 467-68
 uptake and chromosomal incorporation of DNA in, 461
 Meningococcus antiserum, 10
 Mepacrine *Plasmodium falciparum* and, 434
 Mercury-resistant bacteria isolation of colony hybridization and, 633
 Metacyclogenesis, 504-5
 Metal corrosion sessile microorganisms and, 595-96
 Methane monooxygenase oxidation pathway for methanotrophs and, 42
 soluble compounds synthesized by, 44-48
 Methanol dehydrogenase methanol oxidation in methanotrophs and, 38
 Methanotrophs *Escherichia coli* expressing Mox genes from, 37
 methane oxidation in genes for, 42
 plasmids in, 36
 production of chemicals by, 44-48
 3-Methoxybenzamide *Leishmania* differentiation and, 505
 6-Methoxy-2-benzoxazolinone, 417
 Methyl anthranilate spore germination and, 537
 Methylene octadecanoic acid *Campylobacter pylori* and, 262
Methylobacillus flagellatum auxotrophic markers of, 38
 auxotrophic mutants complemented with DNA from, 36

- auxotrophic mutants of, 33
foreign promoters functional in, 37-38
recA gene homologs cloned from, 34-35
RuMP pathway mutants in, 41
Methylobacterium extorquens AM1
assimilation genes in, 41-42
Escherichia coli expressing
Mox genes from, 37
growth on dichloromethane, 43
marker exchange in, 34
methanol oxidation mutants in, 33
moxF gene of
promoter region for, 35
Mox genes of, 39-40
PQQ synthesis in, 41
pRK404 subcloning vector in
instability of, 31
Tn5 delivery vehicle for, 34
Methylobacterium organophilum XX
assimilation genes in, 41
gene transfer system in, 30
growth on dichloromethane, 43
methanol oxidation mutants in, 33
moxF gene of
promoter region for, 35
Mox genes of, 39-40
Methylobacterium species
codon usage in, 35
dcmA gene of
translational start site for, 35
moxF gene of
expression in *Escherichia coli*, 37
Methylobacterium sp. DM4
dichloromethane utilization in, 42-43
Methylococcus capsulatus
gene transfer system in, 30
moxF genes cloned from, 39
Methylomonadaceae
recA gene of, 375
Methylomonas albus BG8
methane oxidation mutants in, 33
moxF gene of
translational start site for, 35
Methylomonas clara
cryptic plasmid of
promoter region from, 35
Methylophilus methylotrophus
auxotrophic mutants complemented with DNA from, 36
expression of foreign genes in, 37-38
marker exchange in, 34
plasmid transfer in, 34
recA gene of, 375
transposon mutagenesis in, 33-34
Methylophilus methylotrophus AS1
growth yield of
recombinant DNA technology and, 49
Methylosinus species
marker exchange in, 34
Methylosinus trichosporium OB3b
methane oxidation mutants in, 33
moxF genes cloned from, 39
Methylotroph genes
expression in foreign hosts, 36-37
Methylotrophs, 27-52
assimilation genes in, 41-42
auxotrophy markers in, 38
bioremediation and, 51-52
classification of, 28-29
commercial utility of, 43-50
dichloromethane dehalogenase gene of, 42-43
expression of foreign genes in, 37-38
gene cloning vectors and, 31
genetic advances in
commercial implications of, 52
genetic analysis and manipulation of
techniques for, 29-34
gene transfer systems in, 30-31
methanol oxidation genes in, 38-41
molecular biology of, 34-36
mutagenesis in, 33-34
nitrogen fixation genes in, 43
plasmids in, 36
6-Methylsalicylic acid
Penicillium patulum and, 413
Mevalonate pathway
HMG-CoA synthase and, 274
Mevinolin
cholesterol synthesis and, 274, 402
HMG-CoA reductase and, 278
microbial synthesis of, 287
Mexico
AIDS/HIV-1 infection in, 566
Microaerophilism
Campylobacter pylori and, 253
Microcalorimetry
sessile microorganisms and, 587-88
Microcoleus chthonoplastes
cyanobacterial mat
photosynthesis transitions in, 590
Microelectrodes
sessile microorganisms and, 588-90
Microfungi
antibiotics produced by, 398-99
Milbemycins
insecticidal activity of, 401
Mitomycin C
bone marrow damage due to reversal of, 273
Mollicutes, 84
Molluscum contagiosum virus
benign tumors due to, 179
Monacolin K, 402
Monascus ruber
monacolin K from, 402
Monascus species
compactin/mevinolin synthesis in, 287
Monensin
biological activities of, 399
varicella-zoster glycoprotein gpI and, 64
varicella-zoster glycoprotein gpII and, 66-68
varicella-zoster glycoprotein gpIII and, 69
Monobactams, 285
Monoclonal antibodies
Campylobacter pylori and, 255
Moraxella bovis
pilins of, 453
Mosquito exflagellation factor (MEF), 440
Mosquito vector
malaria parasites in, 438-40
Mouse hepatitis virus (MHV), 304
Mucorales
trispic acid sex hormones of, 413
Muscular dystrophy
loxistatin and, 275
Mutagenesis
RecA protein and, 367-68, 384-85
Mutastatin, 275
Mutational analysis
Caulobacter crescentus and, 695-96
Mutational biosynthesis, 289-90
MY-336a
nontoxic pharmacological activity of, 402

- Mycobacterium avium*
oligonucleotide probes for, 638
- Mycophenolic acid, 397
- Mycoplasma capricolum*
A+T content of, 83
- Mycoplasma flocculare*
restriction and modification systems in, 88
- transposable elements of, 98
- Mycoplasma gallisepticum*
PEG-mediated transformation of, 85
- rRNA operons of, 109
- Mycoplasma hominis*
Tn916-containing transformants of, 95
- Tn916 transferred into, 87
- Mycoplasma hyopneumoniae*
restriction and modification systems in, 88
- transposable elements of, 98
- Mycoplasma hyorhinis*
PEG-mediated transformation of, 85
- Tn916-containing transformants of, 95
- transposable elements of, 98
- Mycoplasma mycoides* subsp. *mycoides*
PEG-mediated transformation of, 85
- plasmid isolated from, 90-91
- restriction and modification systems in, 88
- Tn916-containing transformants of, 95
- transfection of
electroporation and, 86
- Mycoplasma pneumoniae*
genetic variation in, 96-98
- Mycoplasma pulmonis*
genetic variation in, 96-98
- homologous recombination in, 85-86
- PEG-mediated transformation of, 85
- restriction and modification systems in, 88
- Tn916-containing transformants of, 95
- Mycoplasma species*
genome size of, 83
- rRNA operon organization in, 108-9
- Mycoplasmas*, 81-99
extrachromosomal DNAs and, 89-95
- genetic variation in, 95-98
- gene transfer in, 84-88
- phylogenetic relationship of, 82-84
- plasmids isolated from, 89-91
- transposable elements of, 93-95
- Mycoplasma viruses*, 89
- Mycotoxins
biological activities of, 400
- Myxococcus* species
fruiting body formation in, 703
- macrolides isolated from, 282
- Myxococcus xanthus*
fruiting in
cyclic AMP and, 413
- N
- Nairobi
AIDS/HIV-1 infection in, 568
- Naphthalene degradation
gene probe analysis and, 633
- Nectria lucida*
FR-900483 from, 403
- Neisseria cinerea*
Opa proteins of, 456
- Neisseriae*
gene expression in
slipped strand mispairing and, 456-59
- pathogenic
gene families in, 453-56
- transformation-mediated recombination and, 463-66
- pilin genes of
regulation of, 466-67
- pilin variation in
mechanisms of, 459-62
- protein variation in, 451-71
- recA* gene of, 374
- Neisseria flavescens*
interspecies exchange and, 464
- Opa proteins of, 456
- Neisseria gonorrhoeae*
DNA uptake deficient mutants of, 465
- gene rearrangements in, 452
- interspecies exchange and, 464-65
- Opa proteins of, 455
- pilin genes of, 453
- interstrain exchange and, 464
- regulation of, 466-67
- recA* gene of, 374
- Neisseria lactamica*
Opa proteins of, 455-56
- Neisseria meningitidis*
interspecies exchange and, 464
- Opa proteins of, 456
- pilin genes of, 453
- Nematodes
antibiotics inhibiting, 401
- Neocarzinostatin
anticancer activity of, 400
- Neosurugatoxin
shellfish poisoning and, 401
- Neuraminidase
varicella-zoster glycoprotein gpl and, 64
- varicella-zoster glycoprotein gpII and, 67
- varicella-zoster glycoprotein gpIII and, 69
- New Zealand
AIDS/HIV-1 infection in, 571
- Nikkomycins
agricultural uses of, 278-79
- insecticidal activity of, 401
- Nitrogen
Campylobacter pylori
metabolism and, 251-52
- Nitrogen fixation
methylophils and, 43
- Nocardia mediterranea*
rifamycin from, 405
- Nojirimycin
glucosidase inhibition and, 404
- Nucleic acid hybridization, 625-42
- Campylobacter pylori* and, 261
- detection sensitivity and specificity of
improvements in, 640-41
- environmental applications of, 638-40
- environmental recovery and, 634-35
- gene probe development and, 635-38
- probe labelling and hybrid detection and, 629-30
- probe technology and, 627
- target nucleic acid sources and, 630-34
- Nucleoside transport
Leishmania plasma membrane and, 514
- Nucleotidases
Leishmania virulence and, 513-14
- O
- Oceania
AIDS/HIV-1 infection in, 571
- Octadecanoic acid
Campylobacter pylori and, 262
- Octadecenoic acid
Campylobacter pylori and, 262
- Oligonucleotide probes, 638

- Oligostatins
enzyme inhibition by, 281
- Operons
rRNA, 106-10
transcripts of, 110
- Organ transplantation
cyclosporin A and, 273
- Ornithine decarboxylase
inhibition of, 404
- Ornithine transcarbamoylase (OTCase)
aspartate transcarbamoylase compared, 207-8
primary sequence of, 203-8
- Oxidase
Campylobacter pylori and, 251
- Oxytocin
inhibitors of
development of, 276
- P
- Paecilomyces carneus*
immunomodulator from, 273
- Paecilomyces* species
compactin/mevinolin synthesis in, 287
- Pamamycin
aerial mycelium formation and, 414
antibacterial activity of, 288
- Pamaquine
Plasmodium falciparum and, 434
- Pancreatic α -amylase
microbial inhibitors of, 281
- Papain
inhibition of, 275
secondary metabolites and, 404
- Paracoccus denitrificans*
closed circular plasmid DNA transformation in, 30
codon usage in, 35
methanol oxidation mutants in, 33
moxF gene of
expression in *Escherichia coli*, 37
translational start site for, 35
plasmid transfer in, 34
- Paraherquamide
antihelminthic use of, 279
- Parasitism
intracellular
Leishmania virulence and, 501-6
- Patulin
isolation of, 400
- Paxisterol
analgesic activity of, 285, 402
- Pendolmycin
epidermal growth factor and, 277
- Penicillium brevicompactum*
compactin from, 402
- Penicillium charlesii*
paraherquamide from, 279
- Penicillium citrinum*
compactin from, 402
- Penicillium cyclopium*
cyclophenin-viridactin synthesis in, 405
- Penicillium paraherquei*
paraherquamide from, 279
- Penicillium patulin*
patulin from, 400
- Penicillium patulum*
hyphal differentiation in
6-methylsalicylic acid and, 413
- Penicillium* species
compactin/mevinolin synthesis in, 287
macrolides isolated from, 282
- Penicillium stoloniferum*
mycophenolic acid from, 397
- Pepsin
secondary metabolites and, 404
- Peptidase inhibitors
identification of, 272
- Peptidoglycan
bacterial biomass on surfaces and, 586
rickettsial, 135
- Peramine
agricultural use of, 280
- Periodate-thiocarbohydrazide silver proteinate
varicella-zoster virus glycoproteins and, 75
- Pertussis
antiserum therapy for, 11
- Pertussis encephalopathy
hypoglycemia and, 20
- Pertussis toxin
pertussis antiserum/pertussis immune globulin and, 11
whooping cough and, 14, 20
- Pertussis vaccine
potency assay for, 12
standardization of, 12-15
- Pestiviruses
flaviviruses and, 679
- Phagocytes
cytotoxic
bestatin and, 273
- Phase contrast microscopy
Campylobacter pylori and, 255
- Phaseotoxin, 403
- Phenicin
cholesterol synthesis and, 274
- Phenoxazinone synthase
production of, 290
- Phoma* species
compactin/mevinolin synthesis in, 287
- Phosphatidyl inositol
microbial inhibitors of, 277
- Phosphinothricin
chloroplast glutamine synthetase and, 279
plant glutamine synthetase and, 403
- Phosphinothricinyl-alanyl-alanine
See Bialaphos
- Phosphoramidase
Campylobacter pylori and, 262
- Phospholipase C
Pseudomonas aeruginosa and, 336
- Phospholipids
sessile microorganisms and, 584-85
- Phosphoramidon, 275
- Phycomycetes
antibiotics produced by, 399
- Pichia pastoris*
host-vector system based on, 49
- Picornaviral polyproteins
maturation cleavage in, 616-18
primary cleavage events in, 609-13
proteolytic processing of, 603-19
secondary cleavage events in, 613-16
- Picornaviruses
family of, 603-9
genetic relationship among, 605
genomic RNAs of, 605-7
RNA recombination in
low-frequency, 326
viral proteins of, 607-9
- Pithomyces chartarum*
mycotoxins produced by, 400
- Plant pathogens
toxic secondary metabolites of, 403-4
- Plaque hybridization, 630-34
- Plasma
pyrogenicity of, 17
- Plasmids
gram-negative bacterial, 91-93

- in methylotrophic bacteria, 36
mycoplasmal, 89-91
Plasmodium berghei
gametocytes of
nucleus, chromosomes,
DNA content of, 443
ribosomes of, 442
sexual differentiation in, 433
sexual stage-specific protein
expression in, 444
spontaneous exflagellation of,
439
Plasmodium chabaudi
gametocytes of
production of, 435
ribosomes of, 442
Plasmodium elongatum
gametogenesis in, 440
Plasmodium falciparum
chromosomal deletions in,
485-86
chromosomal polymorphism
in, 483-86
chromosome of, 481-83
environmental pressure and,
493-95
gametocytes of
cytoskeleton and microtubular
organization of, 441
nucleus, chromosomes,
DNA content of, 442-
43
ribosomes of, 441-42
gene duplication in, 486-87
genetic diversity in, 479-95
genetic recombination in,
483-85
life cycle of, 430, 481
point mutations and selection
in, 491-93
reduction division of, 483
sexual differentiation in, 432-
33
sexual stage-specific protein
expression in, 443-44
surface antigen genes of
repetitive sequences in,
487-91
Plasmodium gallinaceum
gametocytes of
origin of, 431
sexual stage-specific protein
expression in, 444
spontaneous exflagellation of,
438-40
Plasmodium knowlesi
immune pressure and, 494-95
Plasmodium malariae
sexual differentiation in, 431
Plasmodium vivax
gametocytes of
origin of, 431
sexual differentiation in, 431
sexual stage-specific protein
expression in, 444
Plasmodium yoelii
gametocytes of
origin of, 431
Plocamium telfairiae
bioactive metabolites of
insecticidal activity of, 289
Plum pox virus
complementary DNA probes
for, 637
Pneumococcus
S and R colonial forms of, 4
Pneumocystis carinii pneumonia,
556, 557
Poisoning
shellfish
etiological agents for, 401
Poliovirus, 604
Polyacrylamide gel elec-
trophoresis
Campylobacter pylori and,
263
Polyangium brachysporum
glidobactins from, 283
Polyclonal antisera
Campylobacter pylori and,
255
Polymerase chain reaction
(PCR)
target DNA sequences and,
641
Polyoxins
agricultural uses of, 278-79
Polysomes
rRNA maturation in, 120-24
Porothramycin
biological activities of, 287
Potato spindle tuber viroid
complementary DNA probes
for, 637
DNA probes for, 639
Poxviruses
cellular/viral transcriptases
and, 181-83
DNA synthesis of host cells
and, 175-79
envelope of, 178
intranuclear replication and
expression of, 174-75
pathogenesis of, 179-81
reciprocity interactions of,
173-88
replication of
nucleocytoplasmic interac-
tions during, 183-88
PQQ
biosynthesis of, 40
Precipitin test
Haemophilus influenzae and,
10-11
Proguanil
Plasmodium falciparum and,
434
Prokaryotes
pyrimidine-arginine biosynthe-
sis in, 194-95
rRNA genes in, 106-9
Proline-4-hydroxylase
inhibition of, 404
Proline transport
Leishmania plasma membrane
and, 514
Prosurugatoxin
shellfish poisoning and, 401
Protein electrophoresis
Campylobacter pylori and,
263
Protein kinase C
adriamycin and, 276
inhibitors of
screen for, 285
sangivamycin and, 280
staurosporine and, 277
Protein kinases
varicella-zoster virus gly-
coproteins and, 72-74
Proteins
methylotrophic production of,
49-50
Protein sequencing
RecA protein and, 380-83
Proteus mirabilis
recA gene of, 368-69
Proteus vulgaris
aspartate transcarbamoylase
of, 204
recA gene of, 369
Pseudobactins, 405, 412
Pseudomonadaceae
recA gene of, 371-73
Pseudomonas aeruginosa
auxotrophic mutants of
complementation of, 38
complementation with DNA
from methanol utiliz-
ers, 36-37
colony hybridization and,
640
ornithine transcarbamoylase
genes of, 207
PAK pili of, 469-70
pili of, 453-54
pilus assembly in, 698
recA gene of, 371-72
regulatory genes in, 338-41
resistance in biofilm to tobra-
mycin, 591
surface-active agent of, 406
Pseudomonas aeruginosa ex-
oenzyme S, 336-37
Pseudomonas aeruginosa ex-
otoxin A, 335-58
crystallographic analysis of,
350-51
domains of
functional analysis of, 351-
57

- enzymatic activity of
 expression of, 350
 molecular analysis of, 57
 production of
 environmental factors in,
 337-38
 regulation of, 337-49
 promoters of
 regulation of, 344-47
 secretion of, 349
 synthesis of
 genes involved in, 338-
 41
 transcription of
 regulation of, 341-44
Pseudomonas fluorescens
 light microscopy and, 581-
 82
Pseudomonas phaseolicola
 phasexotoxin of, 403
Pseudomonas putida
recA gene of, 372-73
Pseudomonas species
 aspartate transcarbamoylases
 of, 199
Pseudomonas syringae
recA gene of, 372-73
Pseudomonas tabacum
 wildfire toxin of, 403
 Pseudoreversion analysis
Caulobacter crescentus and,
 711-13
 Puerto Rico
 AIDS/HIV-1 infection in, 565
 Pyochelin
Pseudomonas aeruginosa and,
 338
 Pyocyanine
 isolation of, 397
 Pyoverdine
Pseudomonas aeruginosa and,
 338
 Pyrimethamine
Plasmodium falciparum and,
 434, 493-94
 Pyrimidine-arginine biosynthesis
 physiological organization of,
 194-95
Pythium ultimum
 citrinin from, 402
- Q**
- Quantitative electron microscop-
 ic autoradiography
 varicella-zoster virus gly-
 coproteins and, 75-76
 Quellung test
Haemophilus influenzae and,
 11
 Quinine
Plasmodium falciparum and,
 434
- R**
- Rabbit coronavirus (RCV), 304
recA gene
 of actinomycetes, 377
 of bacterial viruses, 378
 of cyanobacteria, 377-78
 eukaryotic analogues of, 378-
 79
 of gram-negative bacteria,
 368-76
 of gram-positive bacteria,
 376-77
 interactions dependent on
 conservation of, 383-85
 phylogenetic distribution of,
 368-79
 structural conservation of,
 379-83
RecA protein
 activities of, 366-68
 DNA-damage repair and, 366-
 67
 general recombination and,
 366
 gene regulation and, 367
 mutagenesis and, 367-68,
 384-85
 structural conservation of,
 379-83
 Receptor antagonists
 development of, 275-76
 Recombinant DNA technology
 bioactive microbial products
 and, 272
 growth yield of *Methylophilus*
methylophilus AS1 and,
 49
 macrolide synthesis and, 283
 methylotrophs and, 28
 target enzyme production and,
 284-85
 Recombination
 homologous
RecA protein and, 366
 Relapsing fever, 155-70
 etiological agents of, 156
 immunology of, 156-60
 Renin
 endothiapepsin and, 287
 secondary metabolites and,
 404
 Restriction endonuclease DNA
 analysis
Campylobacter pylori and,
 263
 Reticulol
 cyclic AMP phosphodiesterase
 and, 404
 Rhamnolipid
Pseudomonas aeruginosa and,
 336
 Rhinoviruses
 cleavage sequences in, 607
 primary cleavage in, 610-11
 Rhizobiaceae
recA gene of, 373
 Rhizobitoxin, 403
Rhizobium japonicum
recA gene of, 373
 rhizobitoxin of, 403
Rhizobium leguminosarum
recA gene of, 373
Rhizobium meliloti
recA gene of, 373
Rhizobium species
 DNA probes detecting, 636
 Ribose transport
Leishmania plasma membrane
 and, 514
 Ribosomal RNA processing
 See rRNA processing
 Ribulose monophosphate path-
 way
 methylotroph classification
 and, 28
Rickettsia akari
 rickettsial pox due to, 132
Rickettsia conorii
 spotted fever due to, 132
 Rickettsial pox
 etiological agent of, 132
Rickettsia prowazekii
 epidemic typhus due to, 132
 growth kinetics of, 138-39
 internalization by host cells,
 136-38
 membrane transport systems
 of, 140-42
 metabolism of, 143
 multiplication of
 carbon dioxide and, 143-44
 protein 1 of, 133
 serotype protein antigens of,
 134
Rickettsia rickettsii
 slime layer of, 132-33
 spotted fever due to, 132
 endothelial injury due to,
 144-45
Rickettsia species, 131-47
 growth of, 139-40
 host entry and exit of, 136-39
 intracellular damage due to,
 144-45
 metabolism of, 142-44
 molecular genetics of, 145-47
 morphology and composition
 of, 132-35
 transport of, 140-42
Rickettsia tsutsugamushi
 growth kinetics of, 138-39
 penetration into mouse lym-
 phoblasts, 136
 peptidoglycan deficiency in,
 135
 scrub typhus due to, 132
 surface antigens of, 134-35

- Rickettsia typhi*
 endemic typhus due to, 132
 growth kinetics of, 138-39
 protein 1 of, 133
 serotype protein antigens of, 134
 Rifamycin, 405
 RNA polymerase
 coronavirus RNA replication and, 322-24
 inhibition of
 cyclic peptides and, 400
 RNA probes
 single-stranded, 637
 RNase D
 RNA processing and, 113
 RNase E
 RNA processing and, 113
 RNase III
 rRNA processing and, 112-13
 RNase M5
 RNA processing and, 113
 RNase P
 RNA processing and, 113
Rochalimaea species
 growth of, 132
 Romania
 AIDS/HIV-1 infection in, 567
 rRNA
 5S
 maturation of, 116
 16S
 maturation of, 114-16
 23S
 maturation of, 113-14
 rRNA genes
 in prokaryotes, 106-9
 rRNA operons, 106-10
 transcripts of, 110
 rRNA processing, 105-24
 autoregulation of ribosome content and, 122-24
 coregulation with protein synthesis, 121-22
 pathways of, 110-16
 precursors for, 117-20
 Rubella virus
 flaviviruses and, 679
 Rumens bacteria
 genetic manipulation of, 238-39
Ruminococcus albus
 endoglucanase-encoding genes of, 221-22
 genetic manipulation of, 238-39
Ruminococcus flavefaciens FD-1
 celA gene of
 celloextrinase encoded by, 224
- S
Saccharomyces cerevisiae
 cellulase gene expression in, 224-25
 peptide mating factors of, 413
 pyrimidine-arginine biosynthesis in, 195
 pyrimidine nucleotide biosynthesis in, 199
 RecA protein of, 379
Salmonella species
 DNA probes detecting, 636
Salmonella typhi
 isolation of
 precipitin test for, 10
Salmonella typhimurium
 aspartate transcarbamoylase of, 203
 flagellin mutations in, 709
 flagellin promoter in, 460
 flagellum formation in, 700
 recA gene of, 371
 Sangivamycin
 kinase inhibition and, 404
 protein kinase C and, 280
 S antigen, 489-91
 Sarkomycin, 404
 SCH36605
 antiinflammatory activity of, 280
 Schick Test, 16
Schizophyllum commune EGI
 active site of, 236
Sclerotinia fructicola
 arthrospore formation in, 405
 Scrub typhus
 etiological agent of, 132
 Secondary metabolism
 regulation of, 407-8
 Secondary metabolites, 395-419
 activity in animals, 399-403
 activity in plants, 403-4
 antibiotic activity of, 398-99
 as autoregulators, 404-5
 as enzyme inhibitors, 404
 as mineral scavengers, 405
 pigmented, 406
 structural complexity of, 406-9
 as surfactants, 405-6
 Serine pathway
 methylotroph classification and, 28
 Serology
 Campylobacter pylori and, 259-60
 Serotype protein antigens (SPAs)
 rickettsial, 133-34
 Serratia marcescens
 aspartate transcarbamoylase of, 204, 209-10
 recA gene of, 369-70
 Serum
 Campylobacter pylori growth and, 250
 Serum proteinase inhibitors (SERPINS)
 poxviruses and, 180-81
 Sessile microorganisms, 579-97
 behavior of, 580-84
 biofilm sampling of, 591
 biomass of
 determination of, 584-87
 metabolic activity of
 determination of, 587-96
 metal corrosion and, 595-96
 nutrient utilization by, 591-95
 Setamycin
 anti-trichomonad and -nematode activity of, 282
 nematode/cestode inhibition and, 401
 Shellfish poisoning
 etiological agents for, 401
Shigella flexneri
 recA gene of, 370
 Shingles
 varicella-zoster virus and, 60-61
 Shope fibroma virus
 benign tumors due to, 179
 DNA synthesis of host cells and, 176
 Sialodacryadenitis virus (SDAV), 304
 Simian immunodeficiency virus (SIV), 571
 Single cell protein (SCP)
 methylotrophic production of, 49
 SIV
 See Simian immunodeficiency virus
 Smallpox, 3
Sorangium species
 macrolides isolated from, 282
 Soviet Union
 AIDS/HIV-1 infection in, 567
 Spain
 AIDS/HIV-1 infection in, 567
 Spirochetes
 relapsing fever due to, 155-70
Spiroplasma citri
 restriction and modification systems in, 88
 transfection of
 electroporation and, 86
Spiroplasma species
 genome size of, 83
 plasmids isolated from, 89-90
 Spores
 See Bacterial spores
 Sporidesmins
 hepatotoxicity of, 400

- Sporopollenin, 411
- Spotted fever
etiological agents of, 132
- Stachybotrys complementi*
K-76 produced by, 275
- Staphylococcus aureus*
human lung infection by
granulocyte elastase and,
286
- Tn4001 isolated from, 95
- Staphylococcus* species
methicillin-resistant
azinothricin and, 284
- Starch
Campylobacter pylori growth
and, 250
- Staurosporine
bleb formation in K562 cells
and, 285
- protein kinase C and, 277
- Streptococcus ferus*
plasmid pVA380-1 isolated
from, 91
- Streptococcus mutans*
dental plaque and, 275
- Streptococcus pneumoniae*
human lung infection by
granulocyte elastase and,
286
- Streptomycin A, 289
- Streptomyces actuosus*
staurosporine from, 277
- Streptomyces alboniger*
autoregulators in, 414
- panamycin from, 288
- Streptomyces albus*
enkephalinase inhibitors from,
275
- Streptomyces aureofaciens*
vasodilator compounds from,
402
- Streptomyces avermitilis*
avermectins from, 401
- Streptomyces cinnamonensis*
monensin from, 399
- Streptomyces cirratus*
IC201 from, 402
- Streptomyces coelicolor*
sporulation in, 414
- Streptomyces dimorphogenes*
nov. sp.
trestatins from, 281
- Streptomyces fradiae*
recA gene of, 377
- Streptomyces fulvoviridis*
carbapenems from, 290
- Streptomyces gabonae*
MY-336a from, 402
- Streptomyces galileus*
homoolanoline from, 403
- Streptomyces griseus*
butyrolactones from, 405
- sporulation in, 414
- streptomycin production in
autoregulation of, 404-5
- Streptomyces hygroscopicus*
bialaphos from, 279, 403
- herbimycins from, 403
- macrolides from, 273-74
- Streptomyces hygroscopicus* sub-
sp. *limoneus*
valioline from, 281
- Streptomyces lavendulae*
complestatin from, 275
- Streptomyces lividans*
cellulase gene expression in,
224
- genetic manipulation of,
239
- phenoxazinone synthase in
gene for, 290
- Streptomyces myxogenes*
oligostatins from, 281
- Streptomyces olivaceogriseus*
FK-156 from, 403
- immunostimulating peptide
from, 273
- Streptomyces olivoreticuli*
bestatin from, 273
- Streptomyces sagonensis*
herbicidins from, 403
- Streptomyces* species
macrolides from, 282
- Streptomyces staurosporeus*
staurosporine from, 277
- Streptomyces tsukubaensis*
FK-506 from, 403
- macrolides from, 273-74
- Streptomyces violaceus*
FK-156 from, 403
- immunostimulating peptide
from, 273
- Streptomyces virginiae*
virginiamycin from, 405
- Streptomyces viridochromogenes*
bialaphos from, 403
- butyrolactones from, 405
- Streptomycin, 411
- Streptonigrin
HIV and, 281
- Streptovitamin A
vaccinia virus and, 178
- Succinate
Campylobacter pylori
metabolism and, 251
- Sulfadiazine
Plasmodium falciparum and,
434
- Surface glycoproteins
Leishmania virulence and,
509-15
- Surface tubule elements (STEs)
poxviruses and, 177
- Surfactants
bacterial, 405-6
- Surfactin, 406
- Swainsonine
varicella-zoster glycoprotein
gpII and, 65-69
- T
- Tanzania
AIDS/HIV-1 infection in, 569
- T-cell differentiation
DNA rearrangements in, 452
- Teleocidin B, 277
- TEM
See Transmission electron
microscopy
- Tetradecanoic acid
Campylobacter pylori and,
262
- Tetrazolium plate test
spore germination and, 538
- Thailand
AIDS/HIV-1 infection in,
570-71
- Thermomonospora fusca*
cellulase synthesis in, 223-24
- Thermoproteus tenax*
rRNA operons of, 109
- Thermothrix thiopara*
growth rate of, 581
- Thermus thermophilus*
rRNA operons of, 107, 109
- Thiobacillus ferrooxidans*
genomic DNA probes for,
637
- recA* gene of, 375
- Tobacco mosaic virus (TMV)
herbimycin A and, 403
- Tobramycin
Pseudomonas aeruginosa re-
sistance to, 591
- Togaviruses
flaviviruses and, 679
- Tolypocladium* species
cyclosporins from, 402
- Tooth decay
See Dental caries
- Transforming growth factor- α
(TGF- α)
vaccinia gene product and,
179
- Transmissible gastroenteritis
virus (TGEV), 304
- Transmission electron micros-
copy (TEM)
sessile microorganisms and,
593
- Transpeptidase
Campylobacter pylori and,
262
- Transposon mutagenesis
methylothrophs and, 33-34
- Trestatins
enzyme inhibition by, 281
- Trichloroethylene

- microbial degradation of, 51-52
- Trichoderma reesei*
cellulase genes of, 222
genetic manipulation of, 237-38
- Trichoderma reesei* CBHI
Woodward's reagent K and, 236
- Trichoderma* species
compactin/mevinolin synthesis in, 287
- Trypsin
secondary metabolites and, 404
- Tunicamycin
varicella-zoster glycoprotein gpI and, 64
varicella-zoster glycoprotein gpII and, 68
- Turkey coronavirus (TCV), 304
- Typhoid fever, 2
- Typhoid vaccine, 15
- Typhus
etiologic agents of, 132
- Tyrosidine synthetase I, 415
- Tyrosine
PQQ biosynthesis and, 40
- Tyrosine kinase
erstatin and, 278
staurosporine and, 277
- U
- Ubemimex, 273
immunological activity of, 403
- Undecylprodigiosin, 414
- United States
AIDS/HIV-1 infection in, 562-64
AIDS surveillance in, 559-60
- Urea
gastric
Campylobacter pylori and, 258-59
- Urea breath test
Campylobacter pylori and, 260-61
- Ureaplasma* species
genome size of, 83
- Ureaplasma urealyticum*
restriction and modification systems in, 88
- Urease
Campylobacter pylori, 251-52, 254
- Ustilago maydis*
RecA protein of, 378-79
- V
- Vaccines
bacterial
- requirements for, 11-17
- cholera, 15-16
- pertussis
potency assay for, 12
standardization of, 12-15
- typhoid, 15
- Vaccinia gene product, 179-80
- Vaccinia virus
glycolipid metabolism and, 178
malignant tumors due to, 179
- Valiimine
enzyme inhibition by, 281
- Vancomycin
peptidoglycan precursor and, 285
- Varicella-zoster glycoprotein gpI, 62-65
- Varicella-zoster glycoprotein gpII, 65-69
- Varicella-zoster glycoprotein gpIII, 69-70
- Varicella-zoster glycoprotein gpIV, 70-71
- Varicella-zoster glycoprotein gpV, 71
- Varicella-zoster virus
clinical diseases due to, 60-61
virion and genome of, 61
- Varicella-zoster virus glycoproteins, 59-78
biosynthesis of, 62-71
intracellular trafficking of, 75-77
phosphorylation of, 71-75
- Vasopressin
hapalinodolone and, 289
- Verlamelin, 284
- Verticillium lamellicola*
verlamelin from, 284
- Vibrio anguillarum*
recA gene of, 373
- Vibrio cholerae*
El Tor strains of, 16
nonculturable stage of, 9
pilins of, 453
recA gene of, 373-74
- Vibrio fischeri*
luciferase from, 405
- Vibrionaceae
recA gene of, 373-74
- Victorin, 403
- Vimentin
exotoxin A and, 337
- Vincomycin A
antitumor activity of, 404
- Virginiamycin, 405
- cholecystokinin receptor and, 281
- Viridactin, 405
- Virions
coronavirus
structure of, 304-6
- Viroids
- DNA probes detecting, 636
- Viruses
DNA rearrangements in, 452
mycoplasma, 89
- W
- Warthin-Starry silver stain
Campylobacter pylori and, 255
- Water molds
terpenoid sex factors of, 413
- Whooping cough
pertussis toxin and, 14, 20
- Wildfire toxin, 403
- Woodward's reagent K
Trichoderma reesei CBHI and, 236
- Wound infection
Pseudomonas aeruginosa and, 336
- WS-1228A
vasodilator activity of, 402
- WS-1228B
vasodilator activity of, 402
- X
- Xenotonic products, 288
- X potato virus
complementary DNA probes for, 637
- Y
- Yaba monkey virus
benign tumors due to, 179
- Yeasts
antibiotics produced by, 399
- Yellow fever, 650-51
- Yersinia pestis*
recA gene of, 371
yopA gene of
reading-frame shift in, 459
- Yersinia* species
gene probes for, 637
virulence factors in
oligonucleotide probes for, 638
- Z
- Zaire
AIDS/HIV-1 infection in, 569
- Zalerion arboricola*
L-671329 from, 283
- Zearalenone
agricultural uses of, 402
- Zn-proteinase
Leishmania virulence and, 509-13
- Zymomonas mobilis*
cellulase gene expression in, 224-25

